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Remarks

This Amendment is responsive to the Final Office Action of August 15, 2005. Reexamination and reconsideration of claims 1-14 and 23-29 is respectfully requested.

Summary of The Office Action

Claims 1, 3, 6-8, 13, 23, 26, 28-29 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bohorquez (U.S. 5,357,081) in view of Suzuki (U.S. 4,514,737).

Claims 2, 4, 5, 11-12, 24-25, 27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bohorquez (U.S. 5,357,081) in view of Suzuki (U.S. 4,514,737), as applied to claims 1, 23, and further in view of Doluca (US 6,208,127).

Claim 14 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Bohorquez (U.S. 5,357,081) in view of Suzuki (U.S. 4,514,737), as applied to claim 13, and further in view and further in view of Otsuki (US 6,145,961).

Allowable Subject Matter

Claim 9-10 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The Claim Patentably Distinguishes Over The References Of Record

The Office Action (middle of page 2) states that Bohorquez teaches a power regulator that provides an offset voltage and cites "Fig. 3: the voltage at the positive input of element 16". Applicant respectfully submits that the explanation of Figure 3 in Bohorquez says nothing about an offset voltage being provided by the power control 20 (see column 4, lines 7-21). The disclosure discusses controlling the voltage applied to the heater resistor but, this can be

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performed in many different ways without using an offset voltage. Thus, Bohorquez does not teach or suggest that the signal at positive input of element 16 in Figure 3 is an offset voltage. It is only speculation to assume that an offset voltage is provided from the power control 20.

To further support that the signal at positive input of element 16 is not an offset voltage, Bohorquez uses reference numeral 20 to identify a "comparator circuit 20" in prior art Figures 1 and 2, which may or may not be similar to the power control 20 in Figure 3. As seen in Figures 1 and 2, the circuitry components and connections are much different than in Figure 3. Comparator circuit 20 appears to supply the voltage (not an offset voltage) to the heater resistor RH (see column 3, lines 62-64 : "...resistor R1 and comparator circuit 20 are used to determine the voltage applied to the heater resistor RH..."). This is shown in Figure 1 where the signal line from resistor R1 connects to resistor RH and Vout. An adjusted voltage is applied from level shifting circuit 16 (column 3, lines 65-68). Therefore, an offset voltage is not provided by circuit 20, but rather an adjusted voltage is applied by circuit 16. Thus, the alleged interpretation suggested by the Office Action is not supported by Bohorquez and Bohorquez does not teach the claimed power regulator recited in the present independent claims 1, 13, and 28.

Therefore, the teaching of the claimed feature of a power regulator providing an offset voltage is based only on speculation and is not supported by an actual teaching or suggestion of Bohorquez. And based on column 3, lines 60-68, Bohorquez does not support the interpretation of the Office Action. Therefore, Bohorquez does not support the rejection and the rejection must be withdrawn.

Since the recited power regulator is not taught or suggested, then the recited multiple primitives and the recited group of switches and their recited couplings between the internal power supply path and the offset voltage are also not taught or suggested by the references (see claims 1, 13, 28, and method claim 23 with the recited "coupling"). For this additional reason, Bohorquez does not support the present rejection.

Suzuki Reference

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Additionally, the Office Action uses Suzuki to teach a power regulator for providing an offset voltage from the internal power supply path voltage, which Bohorquez fails to disclose. (See Office Action, middle of page 3). The Office Action then cites "FIG. 9-10: the voltage at the input of the op-amp 31."

Applicant respectfully points to co-pending application Serial Number 10/712,112 which cites the same combination of Bohorquez and Suzuki, cited by the present Examiner. In the Office Action issued August 17, 2005, the Examiner stated that Suzuki did not teach a voltage at the input of the op-amp 31, but rather a drive pulse signal p. (see Office Action, bottom of page 5, which states, "Suzuki does not teach providing an offset voltage"). Applicant will assume this is the present position of the Examiner since Suzuki clearly teaches a drive pulse signal p and that conflicting interpretations of Suzuki can not be maintained.

Continuing with the present Office Action on page 7, it states that Suzuki and Bohorquez both concern the same way to control driving by taking a sample voltage to feedback to a controller in order to adjust the driving. However, Applicant respectfully submits that the driving taught by Suzuki is performed with a different function and in a different way than Bohorquez, which produces a different result. Thus, the references do not have the same drive control. For Example, Suzuki connects the voltage Vcc to a level shift circuit 29, which outputs to the microcontroller 30, which in turn produces a drive pulse signal p, not an offset voltage. Furthermore, "Microcontroller 30 produces a drive pulse signal p...whose rise time is delayed with reference to the timing signal d3 for the interval mentioned." (Suzuki, column 6, lines 59-63). This is much different than the operation of Bohorquez.

Suzuki cannot be used to teach that the voltage Vcc can be inputted to a controller and then ignore the rest of the circuit. One of ordinary skill in the art would not understand Suzuki in this manner. There is a reason for the specific connections of Suzuki that reflect its specific configuration and functionality. Simply connecting an internal power supply voltage to the power control 20 of Bohorquez does not automatically re-configure its circuit with non-existent functionality that makes it provide an offset voltage as presently claimed. The Office Action attempts to teach the features of claim 1 in a piece-meal fashion without sufficient teachings,

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which is improper, but even the piece-meal combination still fails to teach the specifically claimed configuration of claim 1.

Suzuki uses the power supply to provide the driving pulse signal p, not an offset voltage. Bohorquez's Figure 3 is vague as to what is being output from power control 20, but it is not based on voltage from the power supply, and Figures 1-2 and their descriptions seem to state that circuit 20 outputs a driving voltage, not an offset voltage. Thus, both references fail to teach or suggest a power regulator providing an offset voltage from the internal power supply as recited in claim 1. Therefore, the resulting combination of Bohorquez and Suzuki still fails to teach or suggest the elements of claim 1.

Thus, claim 1 patentably distinguishes over the references of record and is in condition for allowance.

Bohorquez and Suzuki have different functions and operate in different ways

The Office Action on page 3, line 6 states, "In other words, Bohorquez does not disclose wherein the power regulator directly connects to the internal power supply path." Applicant respectfully submits that this is not what is recited in the claim and is an attempt to trivialize the claim language to a simple direct connection of the power regulator to an internal power supply path in order to make Bohorquez appear more relevant. Such a interpretation ignores the claimed functionality that the offset voltage is provided from the internal power supply path voltage. Of course, all claimed elements must be shown by the references, and in the present case, they are not shown as further explained in the following paragraphs.

Applicant respectfully submits that the driving taught by Suzuki is performed with a different function and in a different way than Bohorquez, which produces a different result. Therefore, one of ordinary skill in the art would not find it obvious to simply swap connections between the references. Thus, the references do not teach or suggest all the claimed features.

For example, Figure 3 of Bohorquez shows a circuit for "controlling the energy applied to the heater resistor of thermal inkjet printheads" and "controls the voltage applied to the heater

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resistor.” (see column 4, lines 7-15). Suzuki, conversely, does not control the voltage but has the object to “stabilize the printing timing and printing pressure of a printing head” when there is a variation in the power source voltage (Summary, column 2, lines 15-20). Thus, Suzuki is directed to a printing timing and printing pressure stabilizing circuit. In fact, the Summary of the Invention states that the invention will “obviate the necessity of providing a circuit for stabilizing the power source voltage.” (Summary, column 2, lines 45-46). This appears contrary to the circuit of Bohorquez.

Therefore, one of ordinary skill in the art would understand that the Suzuki invention has a very different purpose and function and provides no suggestion to modify a voltage controlling circuit like Figure 3 from Bohorquez. The same rationale applies to Bohorquez in that no suggestion exists to modify the voltage controlling circuit of Figure 3 in Bohorquez with the timing and pressure stabilizing circuit of Suzuki. Simply connecting the power control 20 of Bohorquez to an internal power supply path voltage is not enough to teach all the claimed elements and such a connection is not taught or suggested by Suzuki.

For these additional reasons, claim 1 patentably distinguishes over the references of record. Accordingly, dependent claims 2-12 also patentably distinguish over the references and are in condition for allowance.

Independent claims 13, 23, and 28

Independent claims 13, 23 and 28 were rejected for the same reasons as set forth for claim 1. Claims 13 and 28 recite a similar power regulator as in claim 1 and a group of switches controllable to make couplings as recited. Based on the above explanations of the references, Applicant respectfully submits that independent claims 13 and 28 are not taught or suggested by the references and requests that the Examiner reexamine each claim in view of its claim language. Method claim 23 recites providing an offset voltage from the internal power supply path voltage and coupling a selected firing resistor as claimed. The references fail to teach or suggest the claimed method since their components do not perform the recited features as explained above.

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Accordingly, claims 13, 23, and 28, and their dependent claims, are now in condition for allowance.

Claims 2, 4, 5, 11-12, 24-25, 27, and 14

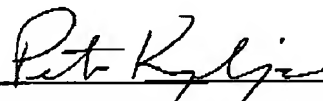
Dependent Claims 2, 4, 5, 11-12, 24-25, 27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bohorquez (U.S. 5,357,081) in view of Suzuki (U.S. 4,514,737), and further in view of Doluca (US 6,208,127). As explained previously, Bohorquez and Suzuki fail to teach or suggest the present independent claims. Thus, dependent claims 2, 4, 5, 11-12, 24-25, 27 and also not taught or suggested and patentably distinguish over the references of record.

For similar reasons, dependent claim 14 is not taught or suggested and patentably distinguishes over the references of record.

Conclusion

For the reasons set forth above, claims 1-14 and 23-29 patentably and unobviously distinguish over the references of record and are now in condition for allowance. An early allowance of all claims is earnestly solicited.

Respectfully submitted,



PETAR KRAGULJAC (Reg. No. 38,520)
(216) 348-5843